

### **REMARKS**

The instant Amendment presents the substance of the claim amendments set forth in the Amendment filed on September 27, 2004 (with the correction of a typographical error in claim 29) and presents additional reasons as to why the presently claimed invention is patentable in all respects.

In accordance with the telephonic discussion with Examiner Kruer on September 15, 2004, the present Amendment amends independent claims 24 and 29 relating to "pellet" subject matter (while retaining dependent claims 25-28 and 30-31) and cancels all other claims in the present application without prejudice or disclaimer and with the right being reserved to pursue such claims in a continuing application. The discussion with Examiner Kruer related to evidence provided in the specification, such as in Table 1, and how pellets formed in accordance with this aspect of the invention required the presence of water in order to absorb oxygen. In particular, Embodiments 1-4 illustrate several embodiments of pellets prepared in accordance with the present invention. When 50 grams of these pellets are stored in a sealed 180 ml container at 15°C in the presence of distilled water, the pellets absorb a substantial amount of oxygen after one week. In contrast, Reference Examples 1-4 repeat Embodiments 1-4 except that no distilled water is present. These References Examples show that after one week under the defined conditions, oxygen is not absorbed. Thus, these Examples show the importance of presence of water in order for the pellets to absorb oxygen and the claims have been amended to reflect this advantageous characteristic. It is of course to be understood that pellets of the invention do not require that they actually be subjected to the defined

conditions, but rather that they have the characteristic that when they are subjected to the defined conditions, the pellets require the presence of water in order to absorb oxygen.

The additional evidence of record demonstrates the importance of the other recitations in the claims, such as in independent claim 24, wherein kneading the hydrophilic reducing organic compound and the hydrophilic and water insoluble thermoplastic resin at a temperature not higher than the melting temperature or decomposition point of the hydrophilic reducing organic compound and equal to or higher than the melting temperature of the hydrophilic and water insoluble thermoplastic resin to form a kneaded compound; and kneading the kneaded compound comprised of the hydrophilic reducing organic compound and the hydrophilic and water insoluble thermoplastic resin compound with the hydrophobic thermoplastic resin so that the kneaded compound is dispersed in the hydrophobic thermoplastic resin is recited.

The hydrophilic and water insoluble resin provides an oxygen gas barrier for the hydrophilic reducing organic compound until such time that oxygen can permeate through the hydrophilic and water insoluble thermoplastic resin when the resin is wetted as illustrated in the aforementioned Embodiments set forth in Table 1 of the specification. In this way, the effectiveness of the hydrophilic reducing compound can be preserved against the presence of ambient oxygen until such time that the composition is contacted by water. The Declaratory evidence provided during prosecution supports the patentability of the present invention. In particular, the Declaration under 37 C.F.R. §1.132 submitted by mail on May 16, 2001,

provides Comparative Examples which show that when pellets are prepared by kneading all the compounds together, rather than in the defined sequence, the hydrophilic reducing organic compound is depleted even in the absence of water. In other words, the pellets of the Comparative Examples do not require the presence of water in order to absorb oxygen under the same conditions used for the Examples of Table 1 of the specification. Thus, the sequence of steps recited in the claims of record is also important in assessing the patentability of the presently claimed subject matter.

The prior art of record does not disclose or suggest the pellets as defined in the claims and certainly does not recognize the significant advantages which can be obtained in accordance with the present invention. Koyama et al., U.S. Patent No. 5,274,024, does not disclose the specifically defined sequence wherein the hydrophilic reducing organic compound and the hydrophilic and water insoluble thermoplastic resin are first combined and the obtained kneaded compound is then mixed with the hydrophobic thermoplastic resin and certainly does not recognize the advantages which can be obtained therefrom. In complete contrast, Koyama et al. requires a blend of the components and, in Example 1 of the patent illustrates the importance of a blend of all three components mixed together relative to a material made from only one or the other of the resin components with the reducing iron. Therefore, if one follows the teachings of Koyama et al. (as further reflected in the claims), one would be led away from the invention defined in the claims of record.

Koyama et al. also does not recognize that the defined pellets with the structure obtained by the recited kneading steps require the presence of water in

order to absorb oxygen as illustrated by the evidence of record. Accordingly, for at least these reasons, the claims are patentable over the teachings of this document.

Laid-Open Japanese Patent No. 56-96686 (referred to by the Examiner as Daiichi Seiyaku) does not remedy the deficiencies of Koyama et al.. This document discloses the use of indirect additives containing ascorbic acid and particularly zeolite on which ascorbic acid is adsorbed. A complete English translation of this document was provided with the response filed on December 4, 2002, and from this translation it can be appreciated that the zeolite is filled into small porous bags which are incorporated into the contents of the food material similar to the conventional presence of bags containing silica gel which one can find in a variety of containers. Such use is significantly different from incorporating the material into pellets which are prepared in accordance with the recited kneading steps. Moreover, it is evident that the disclosed porous bags of Daiichi Seiyaku are not pellets and do not require the presence of water in order absorb oxygen. Thus, if anything, this document would lead those of ordinary skill in the art away from the invention defined in the claims of record.

Teumac et al., U.S. patent No. 5,663,223, has been relied on to allegedly show that oxygen scavengers that were once added directly to foodstuffs are now being incorporated into the food-packaging container. What this section of the patent actually states is that "attempts" have been made to incorporate the oxygen scavenger into the container and not that it is a common practice. What Teumac et al. actually teaches, as is evident from the paragraph beginning at column 4, line 25, is a liner composition which specifically includes at least an inorganic sulfite

compound or a tocopherol compound in an amount sufficient to protect against development of off-flavor in a potable fluid in the container. Based on this specific teaching, one would be directed to the use of an inorganic sulfite compound or a tocopherol compound, and not the oxygen scavenger disclosed in Daiichi Seiyaku which is neither an inorganic sulfite compound nor a tocopherol compound and is specifically taught in a location which is separate from any liner. Moreover, even if one could rely on the teachings of Teumac et al., one would still not arrive at the presently claimed invention since the patent does not teach the claimed pellets prepared from the defined sequence and does not teach the importance of the presence of water in order for the pellets to absorb oxygen.

Turning to the next group of prior art documents asserted against claims 24-31 in the Official Action dated April 22, 2004, the Examiner has relied on Itamura et al., U.S. Patent No. 5,492,953, (rather than Koyama et al.) and combined this patent with Daiichi Seiyaku and Teumac et al.. Itamura et al. relates to a resin composition comprising (A) a polyolefin, (B) a saponified product of an ethylene-vinyl acetate copolymer having defined characteristics, at least one of (C<sub>1</sub>) at least one inorganic substance selected from titanium oxide, talc, calcium carbonate, mica and absorptive inorganic materials, (C<sub>2</sub>) at least one compound selected from the group consisting of metal salts of certain higher fatty acids, metal salts, metal salts of ethylenediaminetetraacetic acid, and hydrotalcite, and (C<sub>3</sub>) a polyolefin modified with an unsaturated carboxylic acid or derivatives thereof, and (D) a saponified product of an ethylene-vinyl acetate copolymer having defined characteristics.

The absorptive materials are described in greater detail in the passage beginning at column 4, line 6. In this paragraph, the materials are specified as being "water-absorptive inorganic material" which include numerous salts and which are described as functioning to minimize deterioration of the gas barrier property of EVOH due to the absorption of moisture invading from the outside.

Itamura et al. does not disclose the pellets of the present invention that have the structure attained by the defined steps and which require the presence of water in order to absorb oxygen. Even if the absorptive inorganic material is selected from the other alternatives disclosed in the patent, it is for the purpose of absorbing water, not oxygen, the presence of which oxygen is protected against by the "high gas barrier property" of the component (D) as indicated in the sentence bridging columns 2 and 3. Thus, there is again no proper basis for making the proposed combination advanced in the Official Action. Furthermore, if the absorptive material is being relied on to justify the combination of documents, it is without question that the patent requires an **inorganic material** and not ascorbic acid as described in Daiichi Seiyaku. Of course, as explained above, the material of this document is disclosed as being loaded into small bags which again is significantly different than the environment of the container and is completely different from the defined pellets. Accordingly, the presently claimed invention is also patentable over the hypothetical combination of documents set forth in the Official Action.

Hofeldt et al., U.S. Patent No. 5,204,389, has been added to the foregoing combinations of references with respect to claims 25 and 30 and has been relied on for its teaching of an effective amount of ascorbate. While the additional reliance on

this document further illustrates an improper reliance on applicants' specification to find bits and pieces of the invention and then to paste them together, the additional patent does not remedy the described deficiencies of the previously cited documents and clearly does not teach the claimed pellets including the steps which are defined in the claims and presence of water which is required for the pellets to absorb water in the manner discussed above. It likewise follows that the combination of Koyama et al. or Itamura et al. and Hofeldt et al. alone as set forth in Sections 13 and 17, respectively, of the Action also cannot stand.

In Section 12 of the Action, the Examiner has relied on the combination of Hekal, U.S. Patent No. 6,130,263, and Daiichi Seiyaku. Without conceding the availability of Hekal as "prior art", applicants note that the patent relates to a polymer which contains a desiccant entrained therein. A desiccant is specifically designed to absorb moisture and can be one of three different types as set forth in column 7. In order to form "veins or channels that act as moisture communicating passages throughout the polymer", a channeling agent is present in the polymer matrix (see the sentence bridging columns 6 and 7). The channeling agent is described with greater specificity in the paragraph bridging columns 12 and 13 and is preferably a hydrophilic polar compound having at least several hydroxy groups. One technique of preparing the material is to combine the polymer-based matrix, the desiccating agent and the channeling agent together, preferably when all three components are in a powder state and before the polymer base is in a molten state (column 8, lines 12-15). Alternatively, the desiccating agent can be combined with a polymer that

acts as a moisture barrier and then the channeling agent can be blended therein (column 10, lines 16 *et seq.*).

Hekal does not teach the presently claimed pellets having the structure attained by the defined steps which require the presence of water in order to absorb oxygen. Indeed, based on the teachings of Hekal, those of ordinary skill in the art would not even attempt to combine the teachings of Daiichi Seiyaku in the manner suggested by the Examiner. In essence, the Examiner has alleged that it would be obvious to try the ascorbic acid-containing zeolite of Daiichi Seiyaku in the polymer matrix of Hekal despite the fact that Hekal does not indicate any requirement for an oxygen scavenger and Daiichi Seiyaku describes the presence of the ascorbic acid-containing zeolite in a porous bag in the interior of the container, and not in the container structure itself. Such a situation would clearly counsel away from the proposed combination of documents. Furthermore, even if there was a valid reason for combining the documents, it still would not result in the presently claimed invention with the defined arrangement and sequence discussed above. In this regard, the specific requirement in Hekal of a channeling agent which "forms veins or channels that act as moisture communicating passages throughout the polymer" is the antithesis of forming an oxygen barrier layer as set forth in the claims. Accordingly, the claims of record are also patentable over this combination of documents.

The Examiner is respectfully requested to consider the claims now of record, particularly in view of the evidence that has been presented in the specification and during prosecution. The presently claimed subject matter is believed to be



patentable in all respects and therefore reconsideration and allowance of the present application are respectfully requested.

Should the Examiner wish to discuss any aspect of the application, he is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,  
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